

Customer No.: 31561
Application No.: 10/707,632
Docket No.: 12398-US-PA

IN THE CLAIMS

Please amend the claims as follows.

Claims 1-6 (canceled).

7. (currently amended) A method of fabricating a semiconductor device, comprising the steps of:

providing a substrate having at least a film layer, an optical isolation layer, an anti-reflection coating and a photoresist layer sequentially formed thereon, wherein the optical isolation layer has a light absorption coefficient sufficient to block light through the anti-reflection coating incident thereon;

performing a photolithographic process to pattern the photoresist layer so that a portion of the anti-reflection coating is exposed; and

patterned the anti-reflection coating, the optical isolation layer and the film layer to form an opening in the film layer.

8. (currently amended) The method of claim 7, wherein the step for patterning the anti-reflection coating, the optical isolation layer and the film layer comprises performing an etching operation using the patterned photoresist layer as a mask in which the film layer has an etching rate ~~much~~ greater than the optical isolation layer.

9. (currently amended) The method of claim 8, wherein the patterned photoresist layer and the patterned anti-reflection coating are also removed in the etching operation ~~process~~.

10. (currently amended) A method of fabricating a semiconductor device, comprising the steps of:

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providing a substrate having at least a film layer, an optical isolation layer, an anti-reflection coating and a photoresist layer sequentially formed thereon;

performing a photolithographic process to pattern the photoresist layer so that a portion of the anti-reflection coating is exposed;

performing an etching operation using the patterned photoresist layer as a mask to pattern the anti-reflection coating, the optical isolation layer and the film layer to form an opening in the film layer, wherein the film layer has an etching rate greater than the optical isolation layer; The method of claim 7, wherein after forming the opening, the method further comprises:

removing the patterned photoresist layer and the anti-reflection coating;

forming a material layer over the substrate covering the optical isolation layer and completely filling the opening; and

performing a chemical-mechanical polishing operation using the optical isolation layer as a polishing stop layer to remove the material layer over the optical isolation layer.

Claims 11-16 (canceled).

17. (new) The method of claim 7, wherein after forming the opening, the method further comprises:

removing the patterned photoresist layer and the anti-reflection coating;

forming a material layer over the substrate covering the optical isolation layer and completely filling the opening; and

performing a chemical-mechanical polishing operation using the optical isolation layer as a polishing stop layer to remove the material layer over the optical isolation layer.

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18. (new) The method of claim 7, wherein the optical isolation layer has a light absorption coefficient greater than 1.8.

19. (new) The method of claim 7, wherein the optical isolation layer comprises a conductive layer.

20. (new) The method of claim 7, wherein the optical isolation layer comprises a metallic layer.

21. (new) The method of claim 7, wherein the optical isolation layer comprises an organic layer.

22. (new) The method of claim 7, wherein the optical isolation layer comprises an inorganic layer.

23. (new) The method of claim 10, wherein the optical isolation layer has a light absorption coefficient greater than 1.8.

24. (new) The method of claim 10, wherein the optical isolation layer comprises a conductive layer.

25. (new) The method of claim 10, wherein the optical isolation layer comprises a metallic layer.

26. (new) The method of claim 10, wherein the optical isolation layer comprises an organic layer.

27. (new) The method of claim 10, wherein the optical isolation layer comprises an inorganic layer.

28. (new) A method of fabricating a semiconductor device, comprising the steps of:

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providing a substrate having at least a film layer, an optical isolation layer, an anti-reflection coating and a photoresist layer sequentially formed thereon, wherein the optical isolation layer has a light absorption coefficient greater than 1.8;

performing a photolithographic process to pattern the photoresist layer so that a portion of the anti-reflection coating is exposed; and

patternning the anti-reflection coating, the optical isolation layer and the film layer to form an opening in the film layer.

29. (new) The method of claim 28, wherein the step for patterning the anti-reflection coating, the optical isolation layer and the film layer comprises performing an etching operation using the patterned photoresist layer as a mask in which the film layer has an etching rate greater than the optical isolation layer.

30. (new) The method of claim 28, wherein after forming the opening, the method further comprises:

removing the patterned photoresist layer and the anti-reflection coating;
forming a material layer over the substrate covering the optical isolation layer and completely filling the opening; and

performing a chemical-mechanical polishing operation using the optical isolation layer as a polishing stop layer to remove the material layer over the optical isolation layer.

31. (new) The method of claim 28, wherein the optical isolation layer comprises a conductive layer.

32. (new) The method of claim 28, wherein the optical isolation layer comprises a metallic layer.

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33. (new) The method of claim 28, wherein the optical isolation layer comprises an organic layer.

34. (new) The method of claim 28, wherein the optical isolation layer comprises an inorganic layer.